RESEARCH SUPERVISION
PROFESSOR K. KOMVOPOULOS

A. Presently Advised Postdoctoral and Graduate Students

J. Cen, *Deformation and Damage Evolution in Elastic-Plastic Media due to Surface Contact Loading*, PhD Department of Mechanical Engineering, University of California, Berkeley.


A. Spyromilios, *Contact Deformation of Elastic-Plastic Media with Hard Inclusions*, MS Department of Mechanical Engineering, University of California, Berkeley.


B. Sattari Baboukani, *In Situ Metal-Catalyzed Synthesis of Graphene Using Amorphous Carbon Films as Precursors and Molecular Dynamics of the Thermal Stability and Oxidation Behavior of Ultrathin Amorphous Carbon Films*, Postdoc Department of Mechanical Engineering, University of California, Berkeley.

B. Graduated MS and PhD Students

B1. MS Students

F. Camacho, *Contact Stress Analysis of Layered Solids* (Department of Mechanical and Industrial Engineering, University of Illinois at Urbana-Champaign, 1987)

S. A. Erpenbeck, *A Study of the Metal Cutting Process and the Wear of a Three-Layer Ceramic-Coated Tool* (Department of Mechanical and Industrial Engineering, University of Illinois at Urbana-Champaign, 1989)

P. J. Lubinski, *An Experimental and Analytical Study of the Sliding Behavior of Layered Media* (Department of Mechanical and Industrial Engineering, University of Illinois at Urbana-Champaign, 1989)

H. Li, *Wear Mechanisms of Sliding Ceramics* (Department of Mechanical and Industrial Engineering, University of Illinois at Urbana-Champaign, 1990)

A. K. Murthy, *Tribological Properties of Plasma-Sprayed Ceramic Coatings* (Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign, 1990)
D. A. Spence, *A Thermal Elastic-Plastic Finite Element Model of Orthogonal Metal Cutting* (Department of Mechanical Engineering, University of California at Berkeley, 1994)

P. A. Mai, *Microstructure and Tribological Properties of Laser-Modified Steel Surfaces* (Department of Mechanical Engineering, University of California at Berkeley, 1998)

A. Choy, *Fatigue of Polycrystalline Silicon in MEMS Devices* (Department of Mechanical Engineering, University of California at Berkeley, 1999)

S. Kim, *Friction and Wear Characteristics of Steel Surfaces Lubricated with Base and Formulated Lubricants at Ambient and Elevated Temperatures* (Department of Mechanical Engineering, University of California at Berkeley, 1999)

I. Lee, *A Fractal Analysis of Adhesion and Friction in Micromachined Systems* (Department of Mechanical Engineering, University of California at Berkeley, 2000)

N. Jamali, *Mechanical Testing of MEMS Devices* (Department of Mechanical Engineering, University of California at Berkeley, 2001)

C. D. White, *Multi-Axial Fatigue Testing of Polysilicon MEMS Devices* (Department of Mechanical Engineering, University of California at Berkeley, 2003)


V. Do, *Effect of Sulfur- and Phosphorus-Containing Additives and Metal Deactivator on the Tribological Behavior of Boundary-Lubricated Steel Surfaces* (Department of Mechanical Engineering, University of California at Berkeley, 2003)

A. Lumbantobing, *Basic Study of Electrical Contact Resistance and Static Friction at the Contact Interfaces of Microelectromechanical Systems* (Department of Mechanical Engineering, University of California at Berkeley, 2003)

S. J. Timpe, *An Experimental Study of Sidewall Adhesion in Microelectromechanical Systems* (Department of Mechanical Engineering, University of California at Berkeley, 2004)


H. Zhang, *Phase Transformation Studies of TiNi and Cu-Al-Ni Shape-Memory Alloys* (Department of Mechanical Engineering, University of California at Berkeley, 2005)

G. Pennecot, *Antiwear Properties of Blends Containing Mixtures of Zinc Dialkyl Dithiophosphate and Different Detergents* (Department of Mechanical Engineering, University of California at Berkeley, 2007)

A. Tsai, *Formation of Antiwear Tribofilms from Engine Oils Blended with Zinc Dialkyl Dithiophosphate Additive and Different Dispersants* (Department of Mechanical Engineering, University of California at Berkeley, 2009)

A. Poulizac, *Antiwear Properties of Blends Containing Mixture of Zinc Dialkyl Dithiophosphate and Different Succinimide Dispersants* (Department of Mechanical Engineering, University of California at Berkeley, 2009)
A. Lee, *Finite Element Analysis of Dynamic Indentation of an Elastic-Plastic Medium by a Rigid Sphere* (Department of Mechanical Engineering, University of California at Berkeley, 2010)

N. Wang, *Molecular Dynamics Study of the Carbon Atom Deposition Process* (Department of Mechanical Engineering, University of California at Berkeley, 2012)

J. M. Matlak, *Nanofriction Properties of Ultrathin Amorphous Carbon Films* (Department of Mechanical Engineering, University of California at Berkeley, 2014)

A. Roy, *Investigating the nanostructure, diffusion barrier characteristics and thermal stability of ultrathin amorphous carbon overcoats with a SiNₓ underlayer* (Department of Mechanical Engineering, University of California at Berkeley, 2020)

### B2. PhD Students


K. Nagarathnam, *Processing and Characterization of Laser-Synthesized Overcoats for Surface Engineering* (Department of Mechanical and Industrial Engineering, University of Illinois at Urbana-Champaign, 1994)

H. Li, *Study of Tribological Behavior of Thin-Film Magnetic Hard Disks Using Scratch Tests and Acoustic Emission* (Department of Mechanical Engineering, University of California at Berkeley, 1994)

B. Wei, *Friction and Wear Micromechanisms of Carbon-Coated Thin-Film Magnetic Rigid Disks and Application of Ion Beam Technology in Head/Media Tribology* (Department of Mechanical Engineering, University of California at Berkeley, 1994)

S.-S. Cho, *Experimental and Analytical Investigation of Multi-Layer Ceramic Coated Cemented Carbide Tool Wear* (Department of Mechanical Engineering, University of California at Berkeley, 1995)

W. Yan, *Micro- and Nano-scale Surface Adhesion and Contact Mechanics Studies* (Department of Mechanical Engineering, University of California at Berkeley, 1997)

W. Lu, *Sputtering Deposition and Characterization of Ultrathin Amorphous Carbon Films* (Department of Mechanical Engineering, University of California at Berkeley, 1999)

C. Klapperich, *Mechanical, Chemical and Biological Evaluation of Energetically Treated Polymer Surfaces for Biomedical Applications* (Department of Mechanical Engineering, University of California at Berkeley, 2000)

N. Ye, *Contact Mechanics of Elastic-Plastic Layered Media with Smooth and Rough Surfaces* (Department of Mechanical Engineering, University of California at Berkeley, 2002)

Z.-Q. Gong, *Analytical and Numerical Contact Analyses of Semi-Infinite Media with Patterned and Rough Surfaces* (Department of Mechanical Engineering, University of California at Berkeley, 2004)

J. Yang, *Dynamic Contact and Friction Study of Homogeneous and Layered Media* (Department of Mechanical Engineering, University of California at Berkeley, 2004)
D. Wan, *Deposition and Characterization of Amorphous Carbon and TiNi Shape-Memory Alloy Thin Films Synthesized by Low-Pressure Radio-Frequency Discharge* (Department of Mechanical Engineering, University of California at Berkeley, 2004)


A. M. Chakravartula, *Nano-scale Mechanical Properties of Biomedical Polymers and a Case Study of the Medical Device Approval Process* (Department of Mechanical Engineering, University of California at Berkeley, 2005)

X. Ma, *Nanocontact Characterization of Shape-Memory Titanium-Nickel Films* (Department of Mechanical Engineering, University of California at Berkeley, 2005).

J. Zhou, *Surface and Interface Mechanics of Polymeric Materials* (Department of Mechanical Engineering, University of California at Berkeley, 2006)

S. Tajima, *Plasma-Assisted Surface Modification of Biopolymers* (Department of Mechanical Engineering, University of California at Berkeley, 2006)

S. J. Timpe, *Experimental Examination of the Tribological Properties of Microelectromechanical Systems* (Department of Mechanical Engineering, University of California at Berkeley, 2007)

H.-S. Zhang, *Surface Modification by Filtered Cathodic Vacuum Arc and Nanomechanical Properties of Thin-Film Media, Cu-Al-Ni Shape-Memory Alloy, and Surface-Textured Silicon* (Department of Mechanical Engineering, University of California at Berkeley, 2009)


Q. Cheng, *Polymer Surface Modification for Bioengineering Applications* (Department of Mechanical Engineering, University of California at Berkeley, 2011)

H. Xu, *Asperity-Scale Surface Mechanics - Implications to Adhesive Contacts and Microscale Deformation Behavior of Rough Surfaces* (Department of Mechanical Engineering, University of California at Berkeley, 2012)


H. Xiang, *Experimental Studies of the Tribological Behavior of Microelectromechanical Systems* (Department of Mechanical Engineering, University of California at Berkeley, 2013)

T. Jee, *Mechanical and Tribological Properties of Skin Studied by Microscale Indentation and Scratching Techniques* (Department of Mechanical Engineering, University of California at Berkeley, 2013)

N. Wang, *Synthesis, Characterization, and Molecular Dynamics Analysis of Ultrathin Amorphous Carbon Films* (Department of Mechanical Engineering, University of California at Berkeley, 2013)

J. Xie, *Synthesis and Characterization of Amorphous Carbon Films for Magnetic Storage Technology* (Department of Mechanical Engineering, University of California at Berkeley, 2015)

F. Shi, *Electrochemical and Mechanical Processes at Surfaces and Interfaces of Advanced Materials for Energy Storage* (Department of Mechanical Engineering, University of California at Berkeley, 2015)

A. A. Maich, *Fretting Wear Mechanisms of A216 Plain-Carbon Steel* (Department of Materials Science and Engineering, University of California at Berkeley, 2015; co-chair: Prof. R. Gronsky)

J. Pu, *Mechanical, Biological and Electrochemical Investigations of Advanced Micro/Nano Materials for Tissue Engineering and Energy Storage* (Department of Mechanical Engineering, University of California at Berkeley, 2016)


S. Wang, *Thermomechanical, Electromagnetic and Material Issues in Heat-assisted Magnetic Recording Technology* (Department of Mechanical Engineering, University of California at Berkeley, 2020)

### C. Postdoctoral Students and Visiting Faculty and Industry Fellows

M.-Y. Chu (post-doctoral student; co-advisor Prof. D. B. Bogy), *AFM and STM Surface Imaging* (1990-1991)


T. Kano (visiting industry fellow), *Head-Tape Contact Mechanics* (1992-1993)


P. Gu (visiting faculty, Department of Modern Mechanics, University of Science and Technology, People’s Republic of China), *Anisotropic Adhesion of Patterned Carbon Nanotube Arrays* (2012-2013)

